

LAWRENCE LIVERMORE

1999—News and

JANUARY

Element 114 Discovered

News broke about the discovery of element 114 by researchers from Livermore and the Joint Institute for Nuclear Research in Dubna, Russia. A long-sought experimental goal, element 114 lived 100,000 times longer than the previous new element found, element 112.



FEBRUARY

On-Site Senate Hearings

The Senate Armed Services Committee held a field hearing at Livermore about DOE's Stockpile Stewardship Program to maintain the nation's nuclear arsenal without nuclear testing. Congressional interest remained high in 1999 with news about security at the weapons laboratories, debate on the Comprehensive Nuclear Test Ban Treaty, and formation of the National Nuclear Security Administration.



MARCH

Laser Science Breakthrough

At the centennial meeting of the American Physical Society, Laboratory researchers reported that they produced antimatter and stimulated nuclear fission by focusing the world's most intense and powerful laser on a thin target. Livermore pursues many breakthrough applications in precision manufacturing and scientific research using ultrashort-pulse lasers.



JULY

Security & Safety Improvements

Laboratory Director Bruce Tarter testified before Congress about our focused efforts to tighten security at Livermore, and at year's end, we were rated "satisfactory" in overall security performance—the highest on a three-tiered rating scale. In July, we also began implementation of DOE's Integrated Safety Management System.



AUGUST

National Ignition Facility Issues

The Laboratory informed DOE that construction of the National Ignition Facility (NIF), a cornerstone of DOE's Stockpile Stewardship Program, will take longer and cost more than initially planned. However, the underlying science and technology are sound for completing this stadium-size complex with the world's most powerful laser. Secretary Richardson ordered a series of actions that is leading to a revised schedule, and the project is proceeding.



SEPTEMBER

R&D 100 Award Winners

Livermore scientists and engineers were presented with six R&D 100 Awards for outstanding achievement in R&D. Our winning technologies have applications in laser machining, communications, computer chip manufacturing, cancer therapy, and law enforcement.



NATIONAL LABORATORY

Accomplishments

APRIL

Genome Dedication

DOE Secretary Bill Richardson dedicated the Joint Genome Institute (JGI) Production Sequencing Facility in Walnut Creek, California. A "working draft" of the sequence for chromosomes 5, 16, and 19 is expected to be completed early in 2000. The JGI is made up of genome researchers from three DOE national laboratories.



MAY

Biodetector Field Trials

Our Advanced Nucleic Acid Analyzer demonstrated in field tests a high probability of detecting even a single target DNA strand in a sample. Livermore is delivering to DOE and other sponsors unique instruments that have dramatically advanced biological-agent detection.



JUNE

W87 Warhead Refurbished

Livermore's program to extend the life of the W87 ICBM warhead met the Air Force's Initial Operational Capability requirement. Earlier in the year, the Pantex plant completed production of the first Laboratory-designed refurbished W87, and a significant number have since been delivered to the Air Force.



OCTOBER

Supercomputer Dedication

The Laboratory and IBM celebrated the "coming of age" of the Blue Pacific supercomputer, capable of nearly 4 trillion operations per second. The advanced computing capabilities at Livermore, created by DOE's Accelerated Strategic Computing Initiative (ASCI), are a key component of stockpile stewardship and make possible scientific breakthroughs in many areas.



NOVEMBER

Environmental Cleanup Success

An environmental remediation technology developed at Livermore had removed 1.2 million pounds of contaminants from an original Superfund site in Visalia, California—an accomplishment that would have taken more than a thousand years using traditional methods. Great progress also continues in remediation of the Livermore site, expected to be completed almost 20 years ahead of schedule.



DECEMBER

Weapons Research Milestone

The first-ever three-dimensional simulation of a nuclear weapon primary explosion was completed using the Blue Pacific computer at Livermore. The success marks a major milestone in the Stockpile Stewardship Program. The year concluded with a visit by Secretary Richardson, when he told Laboratory employees, "The past year has been rough, but it is time to regroup and move forward with a strong focus on our mission."

